Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

1.(currently amended) A method of operating a packet data transmission system having a primary station ~~(PS 1)~~ having a plurality of antennas ~~(PA1 — PA4)~~ and at least one secondary station ~~(SS1)~~ having a plurality of antennas ~~(SA1 — SA4)~~, where the primary station is configured for transmitting packet data on signal paths between pairs of primary and secondary station antennas; the method comprising:

~~the primary station (PS1) transmitting packet data on signal paths between pairs of primary and secondary station antennas;~~

the secondary station ~~(SS1)~~ monitoring its radio environment and sending information about its radio environment to the primary station,

the primary station ~~(PS1)~~ in response to this radio environment information adapting itself and informing the secondary station ~~(SS1)~~ regarding ~~the~~ a type of adaptation made; and

the secondary station ~~(SS1)~~ configuring its receiver resources ~~(RX1 — RX4)~~ for processing the received data and interference ~~by using some of the receiver resources designed to receive transmissions for the purpose of interference cancellation and~~ by choosing selected ones of ~~said~~ the plurality of its antennas ~~(SA1-SA4)~~ for receiving interference signals for interference cancellation.

2.(currently amended) ~~A~~ The method ~~as claimed in~~ of claim 1, ~~characterised in that~~wherein the secondary station ~~(SS1)~~ recommends to the primary station ~~(PS 1)~~ how it should adapt itself.

3.(currently amended) ~~A~~ The method of~~as claimed in~~ claim 2, ~~characterised in that~~wherein the secondary station ~~(SS1)~~ recommends that the primary station ~~(PS 1)~~ use a particular subset of antennas for transmitting packet data.

4.(currently amended) ~~A~~ The method of~~as claimed in~~ claim 2 or 3, ~~characterised in that~~wherein the secondary station ~~(SS 1)~~ recommends the maximum

desired number of receivable transmission antennas to be used by the primary station ~~(PS 1)~~.

5.(currently amended) ~~A~~ The method of~~as claimed in~~ claim 2 or 3, ~~characterised in that~~wherein the secondary station ~~(SS 1)~~ recommends the transmission format to be used by the primary station ~~(PS1)~~.

6.(currently amended) The ~~A~~ method of~~as claimed in~~ claim 2 or 3, wherein~~characterised in that~~ the primary station ~~(PS1)~~ adapts itself as recommended by the secondary station ~~(SS1)~~.

7.(currently amended) The ~~A~~ method of~~as claimed in~~ claim 1, 2 or 3, wherein~~characterised in that~~ the secondary station ~~(SS1)~~ determines the resources to be used for receiving packet data and the resources to be used for interference ~~suppression~~cancellation, and wherein a number of interference sources which can be cancelled by a linear combination of antenna outputs is equal to the number of receiver antennas minus the number of signals to be received from the primary station.

8.(currently amended) The ~~A~~ method of~~as claimed in~~ claim 1, 2 or 3, wherein~~characterised in that~~ the secondary station ~~(SS1)~~ monitors the transfer function of the paths between the primary and secondary stations antennas ~~(PA1....PA4, SA1....SA4)~~.

9.(currently amended) The ~~A~~ method of~~as claimed in~~ claim 1, 2 or 3, wherein~~characterised in that~~ the information about the radio environment of the secondary station ~~(SS1)~~ includes characteristics of the interference present at one or more antennas ~~(SA1-SA4)~~ of the secondary station ~~(SS1)~~.

10.(currently amended) A packet data transmission system comprising:

a primary station ~~(PS1)~~ having a plurality of antennas ~~(PA1 — PA4)~~, signal transmitting ~~(TX1 — TX4)~~ and receiving means ~~(16)~~ and means for adapting itself in response to a received signal from a secondary station ~~(SS1)~~ and means for informing the secondary station ~~(SS1)~~ regarding the type of adaptation made, and

at least one secondary station ~~(SS1)~~ having signal transmitting and receiving means ~~(RX1 — RX4)~~, a plurality of antennas ~~(SA1 — SA4)~~, means ~~(18)~~ for monitoring its radio environment and for transmitting a signal including information about its radio environment, and means ~~(18)~~ for configuring its receiver resources ~~(RX1 — RX4)~~ for processing data signals received from the ~~adapted~~ primary station after adaptation ~~(PS1)~~ and interference ~~by using some of the receiver resources designed to receive transmissions for the purpose of interference cancellation and~~ by choosing selected ones of ~~said~~ the plurality of its antennas for receiving interference signals for interference cancellation ~~(SA1-SA4)~~.

11.(currently amended) ~~A~~ The system as claimed in claim 9, ~~characterised in that the~~wherein monitoring means ~~(18)~~ comprises means ~~(18)~~ for determining the transfer functions of the radio paths between the primary station and secondary stations.

12.(currently amended) A secondary station ~~(SS1)~~ for use in a packet data transmission system having a primary station with a plurality of antennas and, in response to uplink signals may adapt a transmission scheme, the secondary station comprising:

~~a primary station (PS1) having a plurality of antennas (PA1 — PA4) and signal transmitting (TX1 — TX4) and receiving means, the secondary station (SS1) having~~

signal transmitting and receiving ~~(RX1 — RX4)~~ means,

a plurality of antennas; ~~(SA1 — SA4) and~~

means ~~(18)~~ for monitoring its radio environment and for transmitting a signal including information about its radio environment,

means for receiving information regarding the type of adaptation made by the primary station ~~(PS1)~~; and

means ~~(18)~~ for configuring its receiver resources ~~(RX1 – RX4)~~ for processing received data signals and interference ~~by using some of the receiver resources designed to receive transmissions for the purpose of interference cancellation and~~ by choosing selected ones of said plurality of its antennas ~~(SA1-SA4)~~ for receiving interference signals for interference cancellation.

13. (canceled)

14.(new) The secondary station of claim 12, wherein the secondary station determines the resources to be used for receiving packet data and the resources to be used for interference cancellation, and wherein a number of interference sources which can be cancelled by a linear combination of antenna outputs is equal to the number of receiver antennas minus the number of signals to be received from the primary station.